# Chapter 8

# Directory Types and Naming

The Directory Naming standard defines the convention for naming subdirectories on a data volume. This standard lists the predetermined, standard directories that have been established by PDS, plus the rules for forming subdirectory names and abbreviations.

## 8.1 Standard Directory Names

When any of the following directories are included on an archive product, the following standard directory naming convention must be used.

CATALOG — Template subdirectory containing PDS Catalog templates.

DOCUMENT — Documentation subdirectory containing supplemental / ancillary material which augments the understanding or use of the data products.

EXTRAS — Subdirectory to house "value added" elements of the volume beyond the scope of the PDS required elements.

GAZETTER — Gazetteer subdirectory containing tables of information about the geological features of a target.

INDEX — Data and inventory index subdirectory containing files which allow users to locate data of interest.

LABEL — Label subdirectory containing include files which describe the data format and organization.

SOFTWARE — Software subdirectory containing utilities, application programs, or subprograms used to access or process data files.

The following standard directory names are recommended for use on archive volumes.

CALIB — Calibration data subdirectory containing calibration files used in original processing of data, or needed to use the data.

GEOMETRY — Geometry data subdirectory containing relevant files (SEDRs, spice kernels) needed to describe observation geometry.

BROWSE — Data subdirectory containing reduced resolution version of data products.

DATA — A single subdirectory containing one or more data subdirectories each of which contains data products. The DATA subdirectory should be used to unclutter the root directory of multiple data directories.

Note that some data sets may not contain all the components above and, as a result, do not need all of the directories listed above. See the *Volume Organization and Naming* chapter of this document for the required and optional subdirectories on a volume. For example, many image data sets do not include geometry files and so do not need a GEOMETRY directory.

## 8.2 Formation of Directory Names

1. A directory name shall consist of capitalized alphanumeric characters and the underscore "_" character only (i.e., A-Z, 0-9, or "_"). No lowercase letters (i.e., a-z) or special characters (e.g., "#", "&", "*") are allowed.

2. A directory name shall not exceed 8 characters in length. The purpose of this is to comply with the ISO 9660 level 1 media interchange standard.

3. The first letter of a directory name shall be an alphabetic character, unless the directory name represents a year (e.g., 1984).

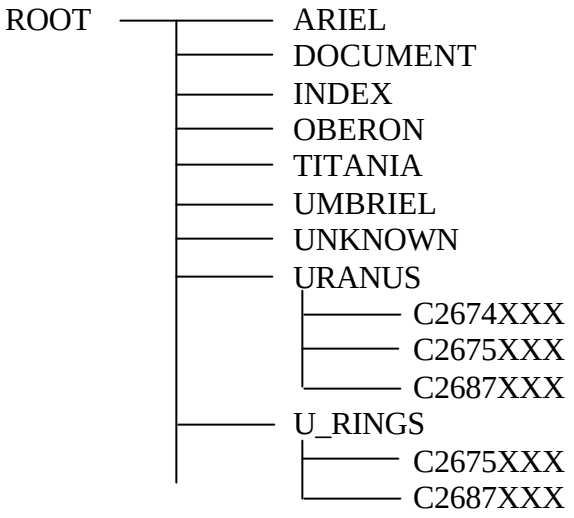
4. If numeric characters are used as part of the name (e.g., DIR1, DIR2, DIR3) the name should be padded with leading zeros up to the maximum size of the numeric part of the name (DIR0001, DIR0002, DIR3267).

5. Directories which contain a range of similarly named files shall be assigned directory names using the portion of the filename which encompasses all the files in the directory, with "X's" used to indicate the range of values of actual filenames in the directory.

   For example, the PDS Uranus Imaging CD-ROM disk contains image files which have filenames that correspond to SPACECRAFT_CLOCK_START_COUNT values. The directory that contains the image files ranging from C2674702.IMG through C2674959.IMG has the directory name C2674XXX/.

6. Directory names shall use full length terms whenever possible (e.g., SATURN, MAGELLAN, CRUISE, NORTH, DATA, SOFTWARE). Otherwise, directory names shall be constructed from abbreviations of full length names using the underscore character to separate abbreviated terms, if possible. The meaning of the directory name should be clear from the abbreviation and from the directory structure.

For example, the following directory structure can be found on the Voyager 2 Images of Uranus CD-ROM Volume 1:




In this case, it is clear from the context that the directory U_RINGS is the abbreviated form of URANUS_RINGS.

7. High level directories that deal with data sets covering a range of planetary science disciplines shall adhere to the following hierarchy:

A Planetary science directory: PLANET/
Planetary body subdirectories: MERCURY/, MOON/, MARS/, VENUS/, COMET/
Discipline subdirectories: ATMOS/, IONOSPHE/, MAGNETOS/, RING/, SURFACE/, and SATELLIT/
(Use satellite name if numerous files exist)

8. The recommended SOFTWARE subdirectory naming convention is described in the *Volume Organization and Naming* chapter of this document. A platform-based model or an application-based model can be used in defining software subdirectories. For a platform-based model, the hardware platform and operating system/environment must be explicitly stated. If there is more than one operating system/environment supported, then they must be subdirectories under the hardware directories. If there is only one, then the subdirectory can be promoted to the hardware directory.

For example, if software for the PC for both DOS and Windows were present on the volume, the directories SOFTWARE/PC/DOS and SOFTWARE/PC/WIN would exist.

If only DOS software were present, the directory would be SOFTWARE/PCDOS.

## 8.3 Path Formation Standard

The PDS standard for path names is based on Level 1 of the ISO 9660 International Standard. A pathname may consist of up to 8 directory levels. Each directory name shall be limited to 8 characters (A - Z, 0 - 9, _ (underscore)). PDS has also chosen the UNIX/POSIX forward slash separator (/) for use in path names. Path names typically appear on PDS volumes as data in index tables for locating specific files on an archive volume. They may also appear as values in a limited number of keywords (e.g. FILE_SPECIFICATION_NAME, PATH_NAME, and LOGICAL_VOLUME_PATH_NAME).

The following are examples of valid path names:

TG15NXXX/TG15N1XX/TG15N12X/ - identifies the location of the directory TG15N12X at the third level below the top level of an archive volume.

DOCUMENT/ - identifies a DOCUMENT directory within the root directory.

Note: The leading slash is omitted because these are relative paths. The trailing slash is included so that the concatenation of PATH_NAME and FILE_NAME gives the full file specification.

Previous PDS standards allowed the use of the DEC VMS syntax for path names. While PDS support for this format continues to exist, it is recommended that all future volumes shall use the UNIX syntax instead.

## 8.4 Tape Volumes

When magnetic tape is used as the archive medium, a directory structure cannot be used because the medium does not support multi-level directories. In this case, files must be stored in a sequential fashion, as if they were all located in the same directory.
A directory structure for the volume shall be designed in any case, so that when the data are transferred to a medium which supports hierarchical file structures, the data can then be placed into a multi-level directory structure. A DIRECTORY object shall be placed on each tape volume (within the VOLUME object) which is used to describe how the sequential files should be placed in a hierarchical structure.

## 8.5 Exceptions to These Standards

In certain cases, the archive media used to store the data, the hardware used to produce the data set, or the software which must operate on the data may impose restrictions on the names of directories and their overall organization. In these cases, the alternate directory organization and naming used on the data volume should be reviewed by PDS personnel during the data set submission process in order to determine the best compromise between the standard given above and any practical restrictions on the volume or data set structure.